USDA Foreign Agricultural Service
GAIN Report
Global Agriculture Information Network
Template Version 2.08

Voluntary Report - public distribution

Date: 8/29/2003

GAIN Report Number: FR3044

France

Agricultural Situation

French Biofuel Situation

2003

Approved by:
Besa L. Kotati
U.S. Embassy

Prepared by:
Marie-Cécile Hénard & Xavier Audran

Report Highlights:
France is the second largest EU producer of biodiesel after Germany, and the second largest EU producer of bioethanol after Spain. However, due to an increasing number (nearly 70% in 2002) of cars and trucks that use diesel fuel in France, biodiesel programs are more promising than bioethanol programs. In May 2003, the EU Commission adopted a new biofuels promotion Directive, and is expected to adopt another Directive on the biofuel tax regime by October 2003. The French government has had great interest in biofuels since 1993 by significant reductions in national "excise" tax. Consequently, France is preparing a law on energy to be put in place by the end of 2003 that is likely to include provisions on biofuel production and uses.

Includes PSD Changes: No
Includes Trade Matrix: No
Unscheduled Report
Paris [FR1]
[FR]

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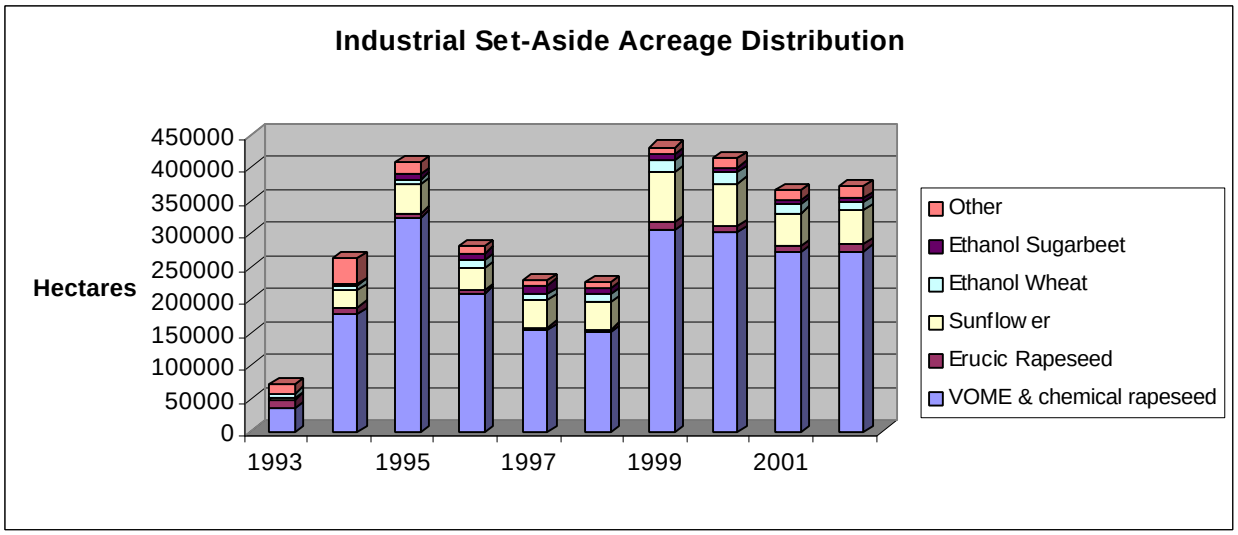
Executive Summary

France is the second largest EU producer of biodiesel after Germany, and the second largest EU producer of bioethanol after Spain. However, due to an increasing number (nearly 70% in 2002) of cars and trucks that use diesel fuel in France, biodiesel programs are more promising than bioethanol programs. In May 2003, the EU Commission adopted a new biofuels promotion Directive, and is expected to adopt another Directive on the biofuel tax regime by October 2003. The French government has had great interest in biofuels since 1993 by significant reductions in national "excise" tax. Consequently, France is preparing a law on energy to be put in place by the end of 2003 that is likely to include provisions on biofuel production and uses.

FRENCH BIOFUEL PRODUCTION

France mainly produces biodiesel from rapeseed and bioethanol from sugarbeet and wheat. Biotethanol is not used directly in gasoline but is blended with isobutylen, a petroleum product to produce EBTE (Ethyl Tertio-butyl Ester) which is then added to gasoline . Industrial crop production is produced on set-aside land. Rapeseed dominates the French industrial crop production, as indicated in the graph below:

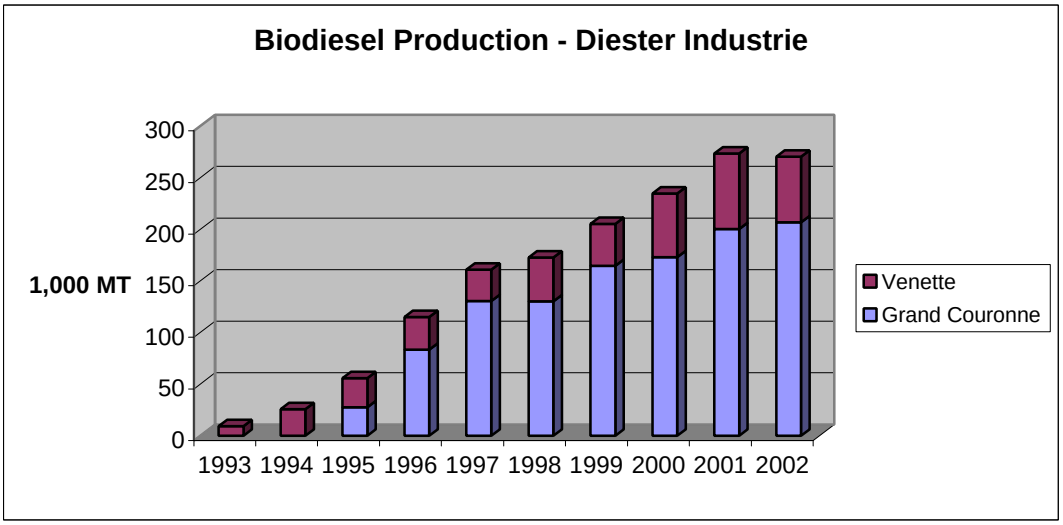


Note: the variations of the total industrial set-aside land can be explained by the fluctuations of the compulsory set-aside rate set by the EU Commission every year.

Biodiesel

To be allowed to produce biofuels that benefit from a tax reduction program for fuels when sold on the French market, a plant needs to have a governmental agreement for a maximum volume of biofuel. There is a total of 317,500 MT of Vegetable Oil Methyl Ester (VOME) approved by the French government to be produced per year benefiting from the French tax cut program. However, France produced 365,000 MT of biodiesel in 2002. The 47,500 MT above the authorized volume were either exported or used in the chemical industry. Since 2000, biodiesel producers have waited for an additional agreement from the French government of 70,000 MT of VOME to be produced. French biodiesel producers hope to have an official agreement by the end of 2003.

The leading French producer of biodiesel is "Diester Industrie." It owns the largest European biodiesel plant, located in Grand-Couronne, Normandy, with 250,000 MT annual production capacity, of which about 180,500 MT approved by the French government. The plant was created in 1995 with 18 million Euros of initial investment from the French oilseed industry (Sofiproteol), grower cooperatives, and local authorities. Diester Industrie also owns another biodiesel plant in Venette, North of Paris, with 60,000 MT approved production. In the past few years, production of these two plants has increased significantly, as indicated in the graph below:



France has three additional plants that have received official authorization from the government to produce biodiesel. One located in Verdun (Eastern France), with an agreement for 33,500 MT, managed by the Novaol company; the second is located in Boussens (Southwestern France), 33,000 MT, belonging to Cognis; and the third plant is located in Germany in Conneman administered by ADM for 10,000 MT.

In July 2003, Novaol (Italian subsidiary of Bunge) and the companies collecting used cooking oil from McDonald's France (Ecogras and Sud Recuperation) signed an agreement stipulating that 1,200 MT of used cooking oil (rapeseed oil) will be supplied annually to Novaol to be processed into biodiesel. The biodiesel produced will be exported to Italy where it will be used as a fuel.

It is estimated that 1 hectare of rapeseed roughly produces an average of 1.2 MT of Vegetable Oil Methyl Ester (VOME):

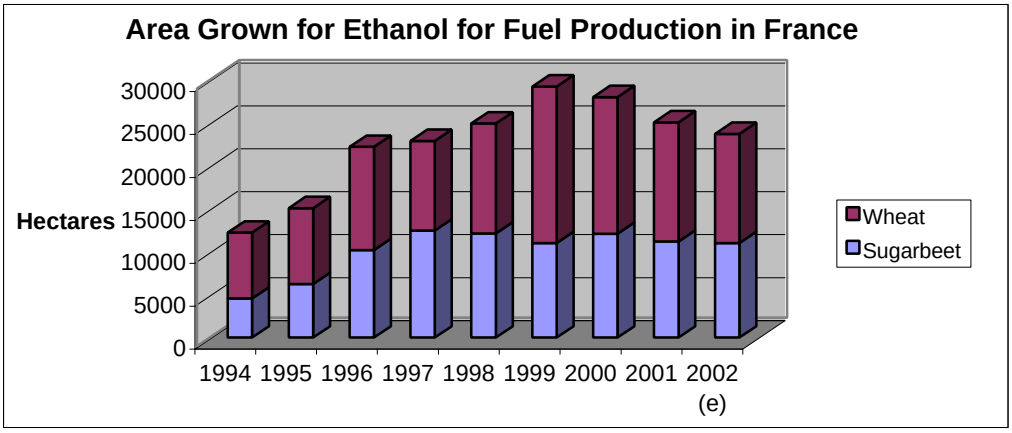
1 hectare –> 3 MT rapeseed –> 1.25 MT crude rape oil + 1.77 MT rape meal

1.25 crude rape oil + 0.12 MT methanol –> 1.2 MT VOME + 0.12 MT glycerin

Bioethanol

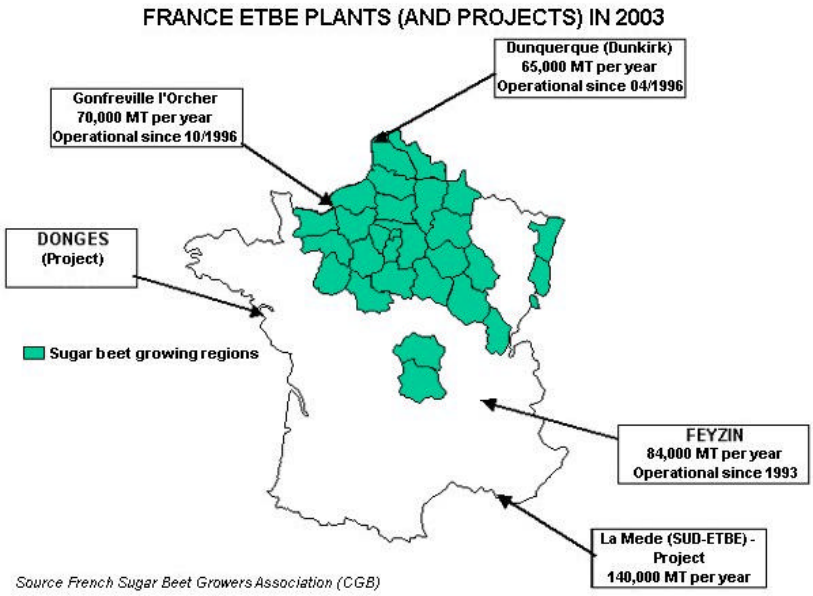
Currently, two thirds of the bio-ethanol produced in France comes from sugarbeet, and one third comes from wheat. However, these proportions are likely to change in the future, as there is no marketable by-product from the bio-ethanol production with sugarbeet, while there are by-products, such as pellets used as cattle feed, from the bio-ethanol production from wheat, which makes it more profitable.

One hectare of sugar beet can produce 5.8 MT of bio-ethanol while one hectare of cereals can produce 2.5 MT of bio-ethanol.



Unlike the U.S. or Sweden, ethanol is not directly blended with gasoline. The largest French oil company, TOTAL S.A. (www.total.com) is a strong opponent of direct blending of ethanol in gasoline. Their main argument is that the increased volatility of ethanol would make the blend exceed EU fuel volatility norms (EC Directive 98/70/CE). Thus, ethanol is chemically combined with a petroleum product, isobutylene, to produce ETBE, which is a oxygenated component like the MTBE used in the U.S. TOTAL produces ETBE in three of its oil refineries and blends it directly into gasoline, up to 15 percent.

1 Hectoliter of ethanol = 0.08 MT
0.47 MT of ethanol + 0.53 MT of isobutylene = 1 MT of ETBE



While the oldest production facility in Feyzin was an old MTBE production facility, the newest ETBE plants in Dunkerque and Gonfreville were built using funds from TOTAL S.A. and from wheat and sugarbeet growers.

production (MT/year)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
ETBE	7,203	58,489	81,851	80,672	128,221	177,168	208,051	193,060	196,664	192,338
Which uses MT of Ethanol	3,419	27,743	38,858	38,250	60,872	84,105	98,569	91,654	93,248	91,197

(Source: French Sugarbeet Growers Association-CGB)

FRENCH BIOFUEL CONSUMPTION

Current Consumption

Biofuels (including biodiesel and bioethanol) currently represent 1% of total fuel consumption in France per year.

However, these biofuels are not being developed at the same rate. In France, diesel fuel is the leader. With lower taxes and French car building know-how focused on diesel engines, particularly for the Peugeot – Citroen company (www.psa.com), a growing number of French motorists are buying diesel cars: currently, 63% of private vehicles in France use diesel, and 37% use gasoline. New diesel engines with high-pressure direct injection made diesel cars as attractive in terms of power and acceleration as gasoline cars, along with efficient fuel consumption. This situation creates a large problem for French oil refiners: refining crude oil produces a certain amount of diesel oil as well as a large amount of gasoline. Thus, in France, refiners face a surplus of gasoline and a deficit in diesel oil: gasoline is exported (20 million MT in 2002) at low prices, mainly to the United States, while diesel oil (22 million MT in 2002) has to be imported, sometimes at a much higher prices. It is then easy to understand why oil companies in France do not like to blend ETBE or ethanol in their gasoline, as it increases their surpluses, but they love to incorporate VOME in diesel as it reduces their need for imports.

VOME is blended with diesel at the rate of 5% with no specific label at the pump, and at a rate of 5-30% in captive fleets, approximately 4,000 vehicles in 30 communities across France. ETBE is blended up to 15 percent in gasoline.

For complete information on biodiesel production by Diester Industrie and consumption, please see the website of the French oilseed industry: http://www.prolea.com

To date, biodiesel used in France is exclusively sourced from rapeseed oil specifically produced to process biodiesel. However, other EU member states such as Italy, Spain and Austria have developed programs where cooking oil is recycled once used in restaurants and processed into biodiesel. In case of short rapeseed supply, there may be similar programs in France.

TOTAL S.A. (www.total.com) is the largest French petrol company to use biofuels. It purchases the bulk of the biodiesel production and 100% of the ETBE produced in France.

Biofuels to Help France Meet Kyoto Protocol Requirement

According to the French biofuel industry, biofuels are the only liquid renewable fuels immediately available, which production can be used to fulfill France's commitments under the 1997 Kyoto protocol. This protocol aims to reduce emissions of greenhouse effect gases and France committed not to increase her emissions of greenhouse effect gases from 1990 to 2010, which is a major challenge given the sharp development of transportation. An EU

Directive from September 2001 stipulated that France must raise its renewable energy consumption to 21% of its total electricity consumption by 2010 from 15% in 1997.

The French Agency for Environment and Energy Management (ADEME) considers that biofuel production in France saves 90 million Euros of fossil fuels, or 1 million MT CO_2 equivalent from being imported. According to the French MinAg, 1 MT of VOME represents 2.5 MT of CO_2 equivalent and 1 MT of bio-ethanol represents 2.7 MT of CO_2 equivalent.

FRENCH AND EU BIOFUEL POLICY

2001 EU Action Plan

In 2001, the EU Commission adopted an action plan to create through incentives the use of biofuels, as part of the EU Commission's overall strategy to favor sustainable development, reduce the EU's energy trade deficit, and reduce the emission of greenhouse effect gases. The goal of the EU Commission's action plan is to replace 20% of fossil fuels with non fossil fuels by 2020. In the EU Commission's perspective, biofuels offer the best short-term perspectives, natural gas ranks second, and hydrogen consuming fuel cells come third.

May 2003 Directive on Biofuel Promotion in Road Transportation

The 2003/30/EC Directive dated May 8, 2003 stipulates that fuels sold in member states should contain 2% of biofuels by 2005 and 5.75% by 2010. The EU Commission will monitor actions of each member state, and member states will have to justify any short fall. ADEME estimates that the 2010 objective would require industrial oilseed plantings to increase from currently 300,000 ha to roughly 1.5 million ha in France, and 8 million ha in Europe.

For more details on the potential impact of the Directive on French biofuel production and consumption, please see report FR1083, dated November 26, 2001.

Biofuel Tax Regime

Biofuels are not price-competitive with fossil fuels, and biofuel production has developed in France since 1993 because the French Government has implemented significant tax reductions on these products.

From 1992 to December 2002, VOME benefited from a tax rebate of 35.06 Euros/hectoliter and bioethanol benefited from a tax rebate of 50.23 Euros per hectoliter. In 2002, tax cuts on biofuels represented 122.50 million Euros for VOME and 57.23 million Euros for bioethanol. These biofuel programs were authorized with special derogations from the EU Commission.

Since March 2002, the EU Council for transportation and energy has approved biofuel tax cut programs as a "specific policy conducted by member states to increase their energetic independence and protect the environment." The EU Council has tried to adapted biofuels' fiscal advantages so that there would be no overcompensation provided to this industry, and so that raw material prices are taken into account. Tax reduction was consequently changed to 35 Euros per hectoliter of VOME (a slight change from previous level) and 38 Euros per hectoliter of bioethanol (a significant decline).

A new EU Directive officially authorizing special tax regimes for biofuels is expected to be finalized by October 2003. Recommendations from the European Parliament are currently expected on the EU Commission project which should then formalize the March 2002 EU

Council decision: no overcompensation for biofuels, and taking into account raw material prices in the calculation of biofuels tax reduction.

French National Policy on Biofuels

The French Ministry of Agriculture considers that biofuel production is important for France because these new markets for farmers increase farm income, has a positive impact on land management, creates jobs, and reduces EU deficit in protein meals for animal feed. Note: biodiesel is produced from rapeseed oil, which is produced from rapeseed crush. Crushing rapeseed produces rapeseed oil and rapeseed meal, which is used in animal feed rations.

In May 2003, the French Government organized a one-day conference on biofuels involving Parliamentarians from the French Senate and the French National Assembly as well as biofuel specialists from petrol, car, transportation, biofuel producing companies, research centers, the French Agency for Environment and Energy Control (ADEME: www.ademe.fr), and the French Agency for Farm Fuel Development (ADECA).

This conference was part of the ongoing "National Debate on Energy" (including a number of conferences and discussions across France on energy and transportation, renewable energies, nuclear energy, and fossil energies) initiated by the French Government and lead by the French Minister for Industry. Following these discussions, the French Government is expected to present an orientation law on energy including the main orientations of France's policy on energy for the next 30 years to the Parliament in fall 2003.

For more information on the French "National Debate on Energy," please see the website: http://www.debat-energie.gouv.fr

Impact of the Reformed CAP on Biofuel Production

The reformed Common Agricultural Policy adopted in June 2003 sets a carbon credit payment of 45 Euros per hectare for farmers for growing non-food crops. French oilseed growers believe it is insufficient for French farmers to continue to grow industrial crops, and believe that 90 to 100 Euros per hectare for growing non-food crops would be necessary to keep non-food production stable in France.

Future Opportunities for Biofuels

Proponents of bio-ethanol would like ethanol to be blended directly into gasoline, as it is done currently in Sweden. This would mean modifying EU fuel volatility norms or at least granting a derogation for blended gasoline. Another boost for ethanol would be a better tax differential, with higher taxes for diesel fuel. Such a move could lead more motorists to switch to gasoline cars.

Some biofuels specialists believe the future for bio-ethanol lies with the development of fuel cells. A wide use of fuel cells is expected in a near future, from home appliances, mobile telephone or computers to cars and trucks. In those fuel cells, bio-ethanol will be used as safe storage for hydrogen, which will be oxidized to produce electricity.

The gasification of bio-products, including arable crops and animal dejections, using the Fisher-Tropsh process could also become a viable solution to produce bio-fuels. Thru this process, the organic matter is converted into petroleum-like products such as diesel fuel, naphtha and kerosene. The French Oil company TOTAL S.A. is working on this process (For more information, contact: sustainable.development@total.com).

The burning of straw in dedicated plants to produce heat and electricity has also a potential in France. The French grain growers are watching closely an experiment currently underway in Spain, which could be easily duplicated in France.